

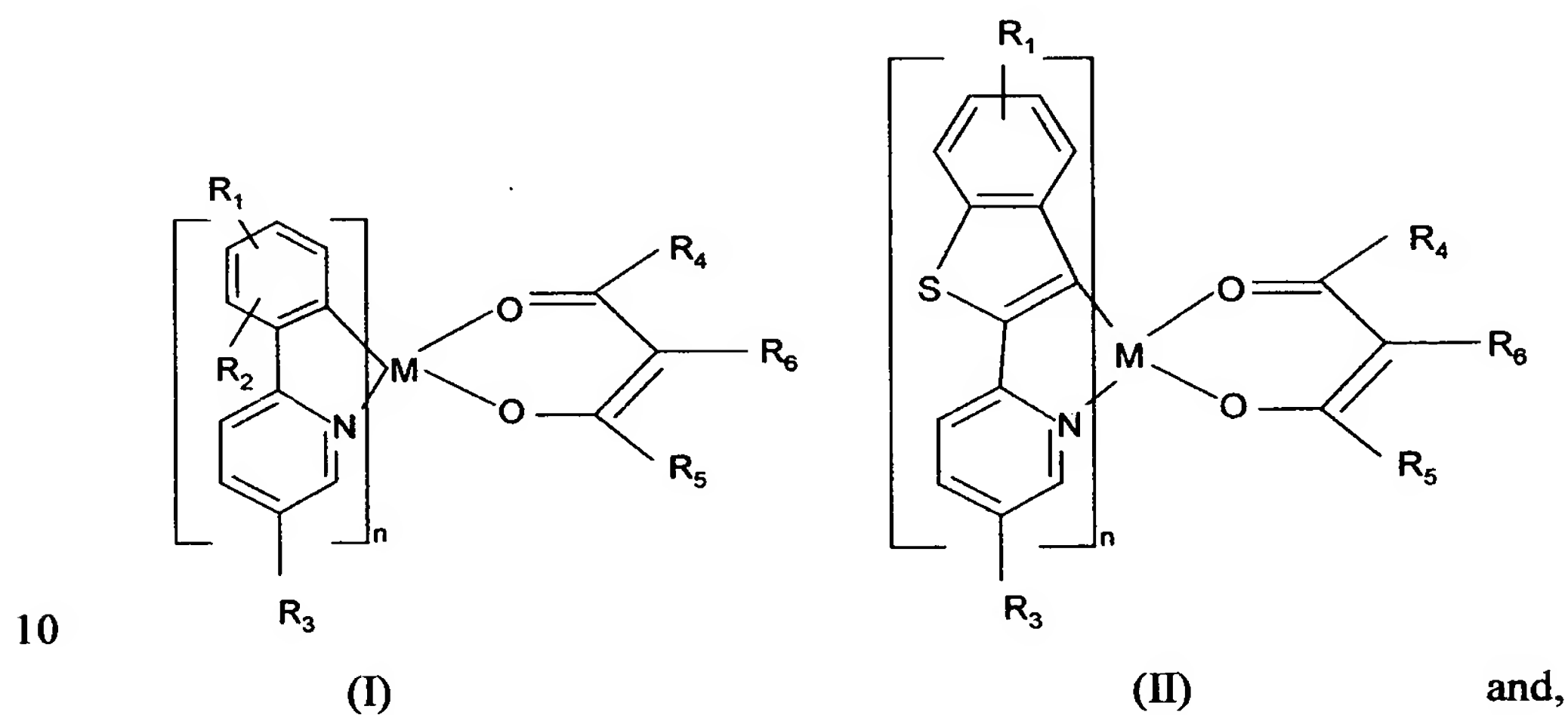
## **Listing of Claims**

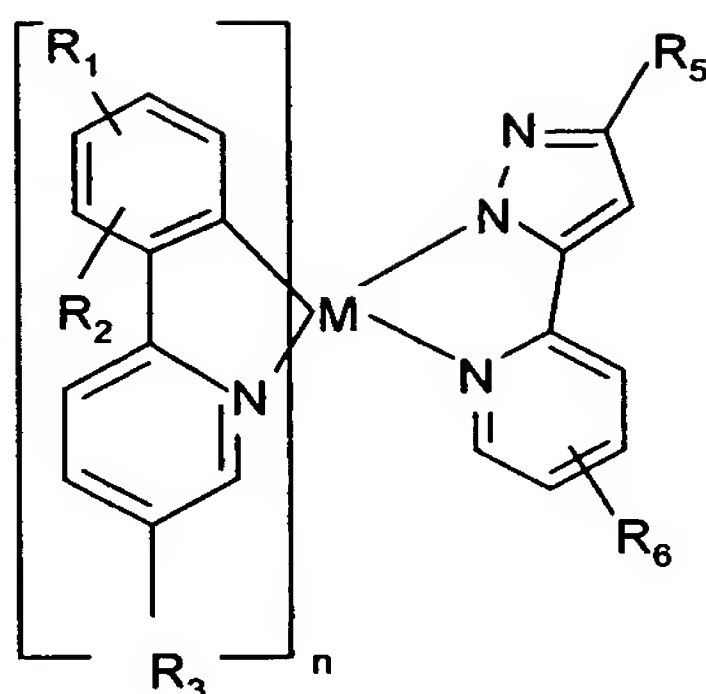
**Please amend the claims as follows. This Listing of Claims will replace all prior versions and listings of claims in this application:**

## 5 Claims

1. - 28. (Canceled)

29. (New) An electroluminescent compound having a general chemical formula selected from the group consisting of formulas (I), (II) and (III) as follows:





(III)

wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> can be the same or different and are independently  
 5 selected from the group consisting of hydrogen; substituted and unsubstituted  
 hydrocarbyl groups; substituted and unsubstituted aliphatic groups; substituted and  
 unsubstituted aromatic, heterocyclic and polycyclic ring structures; fluorocarbon  
 groups; halogen groups, and thiophenyl groups; further wherein R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> can  
 also form substituted and unsubstituted fused aromatic, heterocyclic and polycyclic  
 10 ring structures and can be copolymerisable with a monomer; M is selected from the  
 group consisting of ruthenium, rhodium, palladium, osmium, iridium and platinum;  
 and the sum (n+2) is equal to the valency of M.

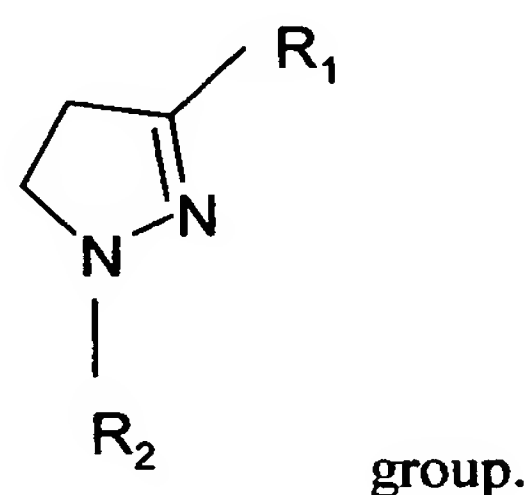
30. (New) An electroluminescent compound as claimed in claim 29,  
 15 wherein M is iridium and n is 2.

31. (New) An electroluminescent compound as claimed in claim 29  
 wherein at least one of R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> includes a group selected from  
 20 aliphatic groups, aromatic groups, heterocyclic groups, alkoxy groups, aryloxy

groups, carboxy groups, substituted and unsubstituted phenyl groups, fluorophenyl groups, biphenyl groups, phenanthrene groups, anthracene groups, naphthyl groups, fluorene groups, and heterocyclic groups.

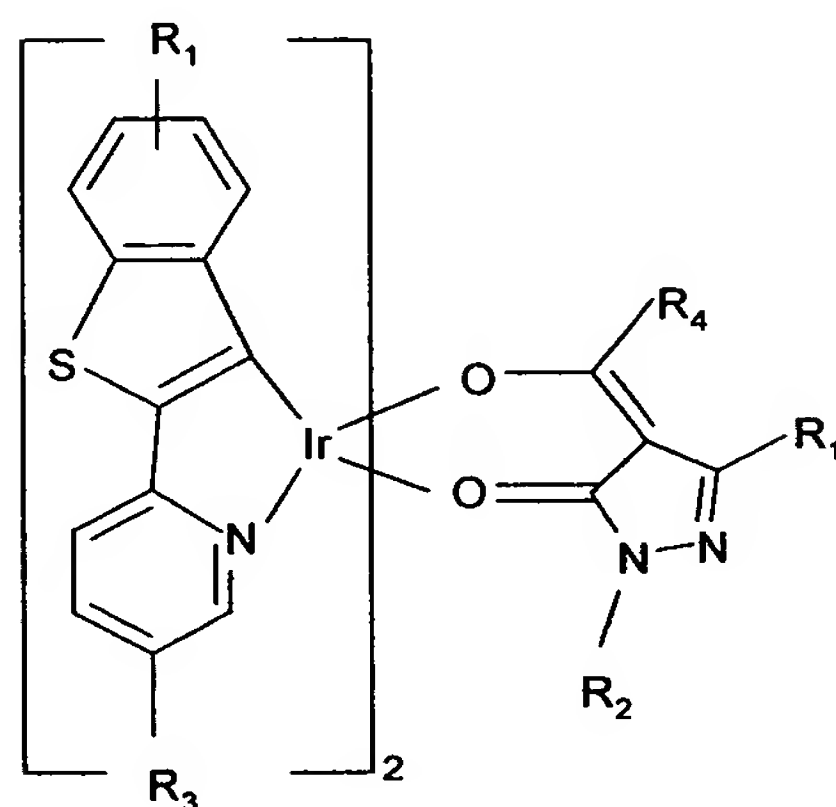
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32. (New) An electroluminescent compound as claimed in claim 29 having a chemical formula of type (I) wherein  $R_5$  and  $R_6$  together form a

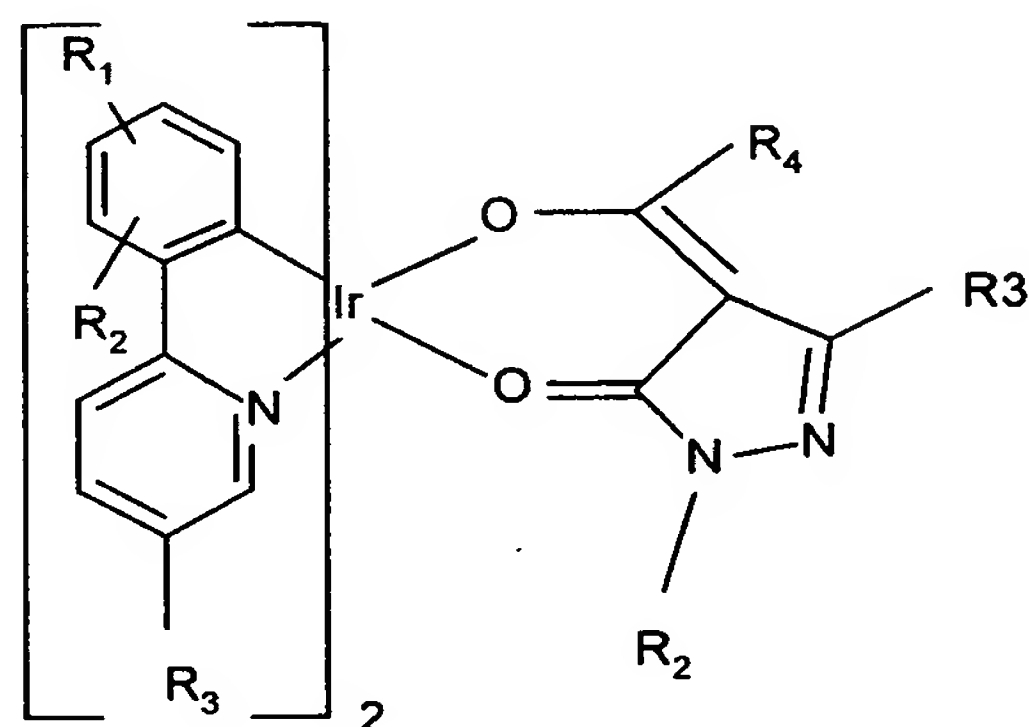


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33. (New) An electroluminescent compound as claimed in claim 32 which has a general chemical formula selected from the group consisting of formulas (IV) and (V) as follows:



(IV)



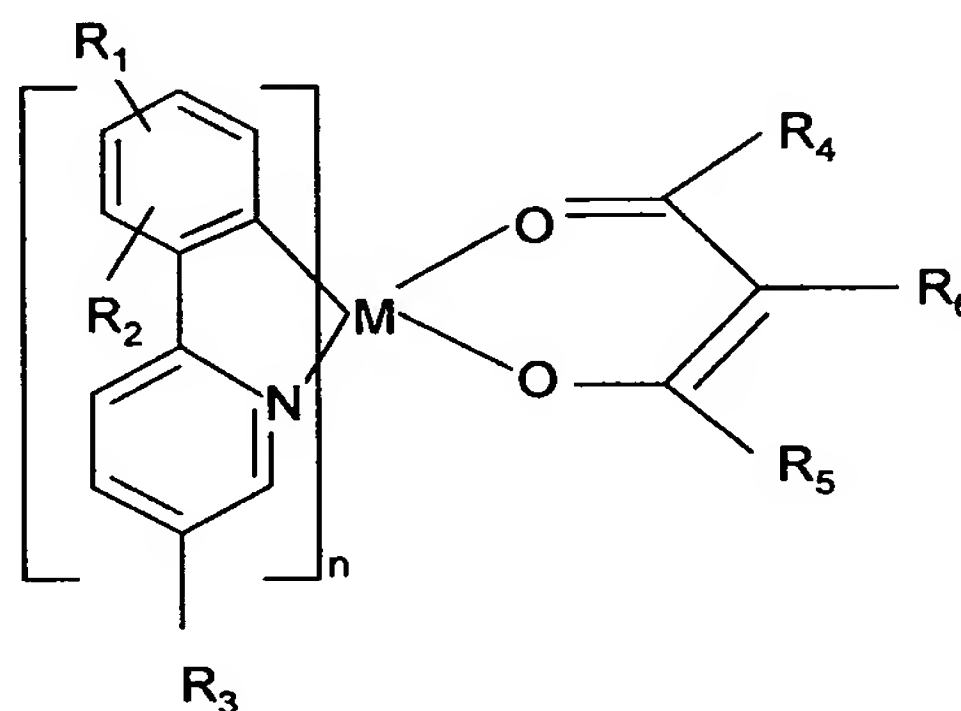
(V)

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34. (New) An electroluminescent compound as claimed in claim 33  
wherein  $R_2$  is a phenyl group or a substituted phenyl group.

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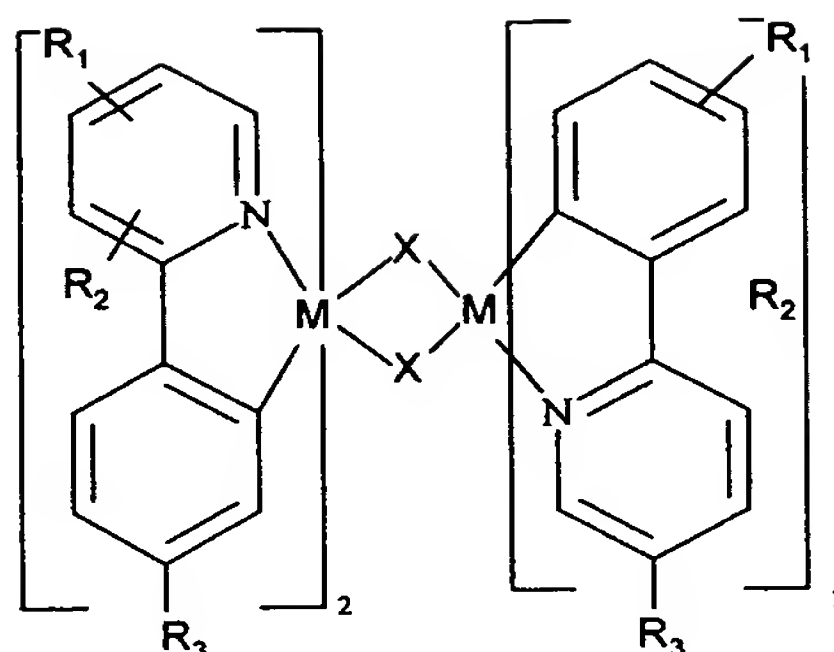
35. (New) A method of preparing an electroluminescent compound  
having the general chemical formula



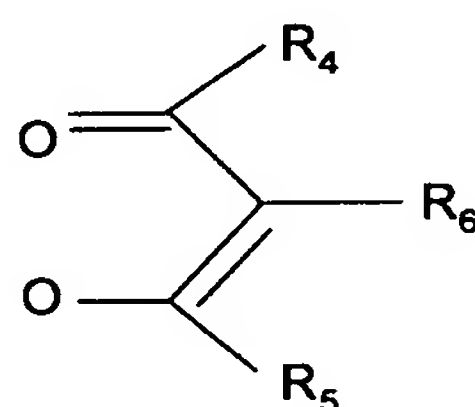
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wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $R_6$  can be the same or different and are independently selected from the group consisting of hydrogen; substituted and unsubstituted hydrocarbyl groups; substituted and unsubstituted aliphatic groups; substituted and unsubstituted aromatic, heterocyclic and polycyclic ring structures; fluorocarbon groups; halogen groups, and thiophenyl groups; further wherein  $R_1$ ,  $R_2$  and  $R_3$  can also form substituted and unsubstituted fused aromatic, heterocyclic and polycyclic ring structures and can be copolymerisable with a monomer, said method comprising the step of reacting a compound having the general chemical formula

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with a compound having the general chemical formula

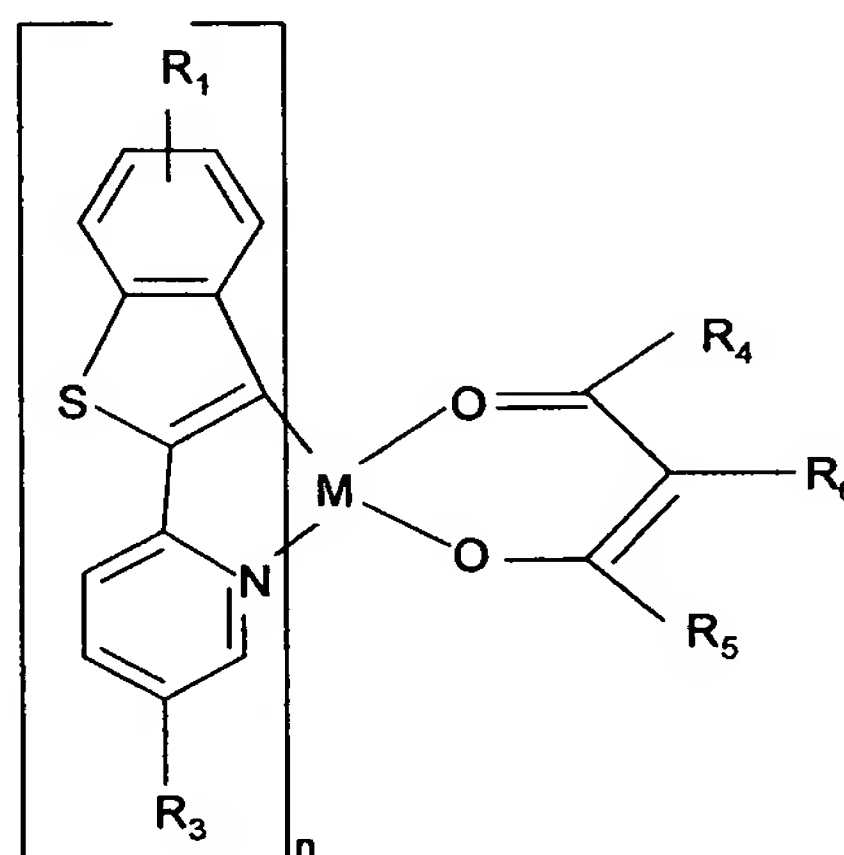


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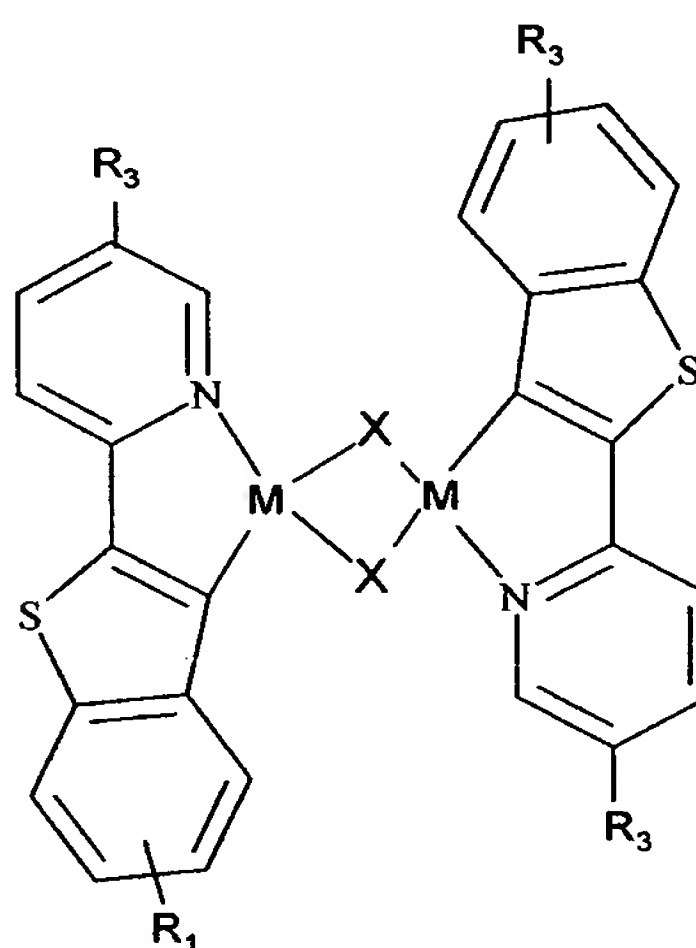
where  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $R_6$  are defined as above,  $X$  is an anion, and the sum  $(n+2)$  is equal to the valency of  $M$ .

36. (New) A method of preparing an electroluminescent compound

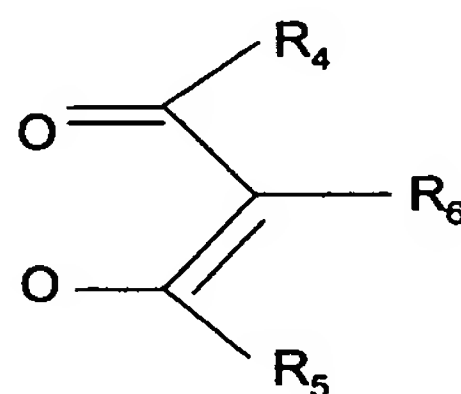
10 having the general chemical formula



wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $R_6$  can be the same or different and are independently selected from the group consisting of hydrogen; substituted and unsubstituted hydrocarbyl groups; substituted and unsubstituted aliphatic groups; substituted and unsubstituted aromatic, heterocyclic and polycyclic ring structures; fluorocarbon groups; halogen groups, and thiophenyl groups; further wherein  $R_1$ ,  $R_2$  and  $R_3$  can also form substituted and unsubstituted fused aromatic, heterocyclic and polycyclic ring structures and can be copolymerisable with a monomer, said method comprising the step of reacting a compound having the general chemical formula

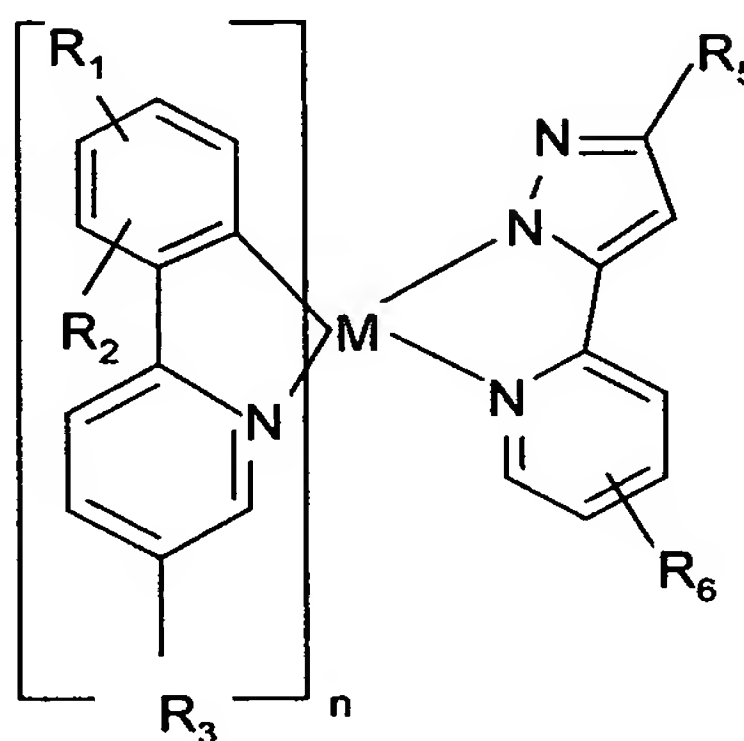


10 with a compound having the general chemical formula

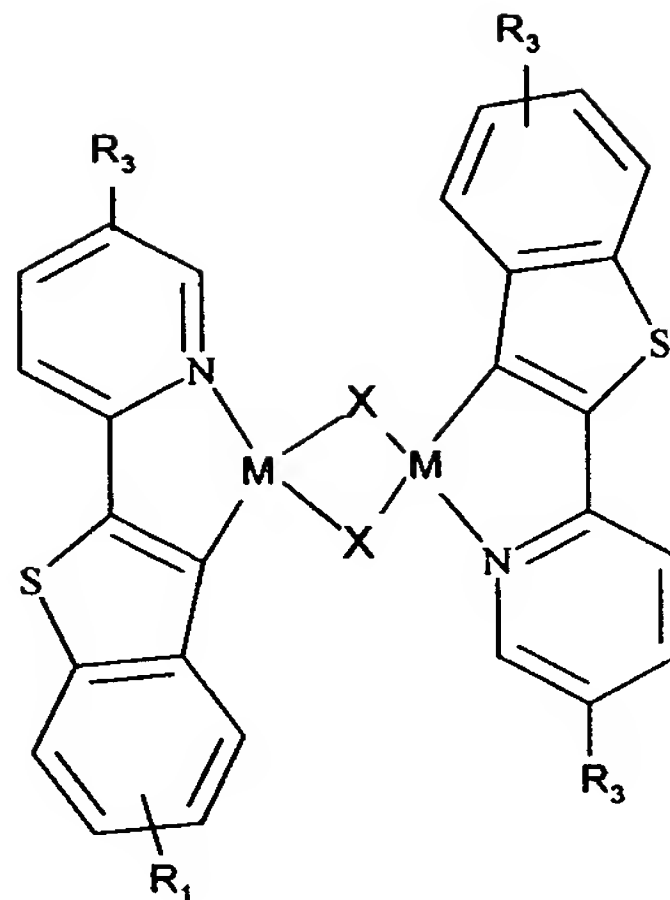


where  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $R_6$  are defined as above, X is an anion, and the sum  $(n+2)$  is equal to the valency of M.

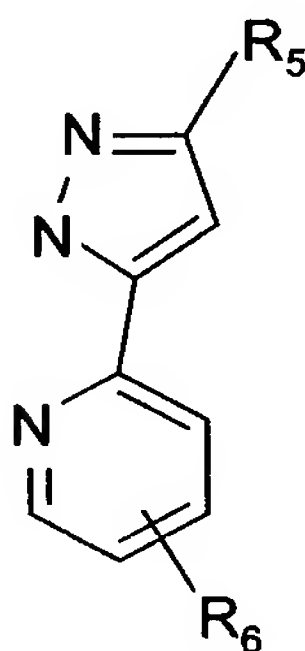
- 5                    37. (New)    A method of preparing an electroluminescent compound  
having the general chemical formula



- wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $R_6$  can be the same or different and are independently selected from the group consisting of hydrogen; substituted and unsubstituted hydrocarbyl groups; substituted and unsubstituted aliphatic groups; substituted and unsubstituted aromatic, heterocyclic and polycyclic ring structures; fluorocarbon groups; halogen groups, and thiophenyl groups; further wherein  $R_1$ ,  $R_2$  and  $R_3$  can also form substituted and unsubstituted fused aromatic, heterocyclic and polycyclic ring structures and can be copolymerisable with a monomer, said method comprising the step of reacting a compound having the general chemical formula
- 10
- 15



with a compound having the general chemical formula



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where  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $R_6$  are as defined above, X is an anion, and the sum  $(n+2)$  is equal to the valency of M.

- 10                    38. (New)    An electroluminescent device comprising: (i) a first electrode;  
(ii) a second electrode; and, (iii) a layer of an electroluminescent material according  
to claim 29 positioned between said first and second electrodes.



39. (New) An electroluminescent device according to claim 38 further comprising a layer of a hole transmitting material positioned between the first electrode and the layer of electroluminescent material.

5 40. (New) An electroluminescent device according to claim 39 wherein the hole transmitting material is selected from the group consisting of:

- (a) an aromatic amine complex;
- (b) a polyaromatic amine complex;
- (c) a film of a polymer selected from the group consisting of  
10 poly(vinylcarbazole), N,N'-diphenyl-N,N'-bis (3-methylphenyl)-1,1'-biphenyl -4,4'-diamine (TPD), polyaniline, substituted polyanilines, polythiophenes, substituted polythiophenes, polysilanes and substituted polysilanes;
- (d) a film of a compound having a general chemical formula selected from the group consisting of formula (VII) and formula (VII) herein, and the  
15 formulas of figures 4 to 8 of the drawings;
- (e) a compound selected from the group consisting of a copolymer of aniline; a copolymer of aniline with o-anisidine, m-sulphanilic acid, or o-aminophenol; and a copolymer of o-toluidine with o-aminophenol, o-ethylaniline, o-phenylene diamine or with an amino anthracene;
- 20 (f) a conjugated polymer; and
- (g) a conjugated polymer selected from the group consisting of poly (p-phenylenevinylene)-PPV and copolymers including PPV, poly(2,5-dialkoxyphenylene vinylene), poly (2-methoxy-5-(2-methoxypentyloxy)-1,4-phenylene vinylene), poly(2-methoxypentyloxy)-1,4-phenylenevinylene), poly(2-

methoxy-5-(2-dodecyloxy-1,4-phenylenevinylene) and other poly(2,5  
dialkoxyphenylenevinylenes) with at least one of the alkoxy groups being a long  
chain solubilising alkoxy group, poly fluorenes and oligofluorenes, polyphenylenes  
and oligophenylenes, polyanthracenes and oligo anthracenes, polythiophenes and  
5 oligothiophenes.

41. (New) An electroluminescent device according to claim 38 wherein  
the electroluminescent material is mixed with a hole transmitting material.

10 42. (New) An electroluminescent device according to claim 38 wherein a  
layer of an electron transmitting material is positioned between a cathode element  
and the layer of electroluminescent material.

43. (New) An electroluminescent device according to claim 42 wherein  
15 the electron transmitting material is a metal quinolate.

44. (New) An electroluminescent device according to claim 43 wherein  
the electron transmitting material is a metal quinolate selected from the group  
consisting of aluminum quinolate, zirconium quinolate and lithium quinolate.

20 45. (New) An electroluminescent device according to claim 42 wherein  
the electron transmitting material is selected from the group consisting of:

(a) a material having the general chemical formula  $M_x(DBM)_n$  where  $M_x$  is a  
metal, DBM is dibenzoyl methane, and  $n$  is the valency of  $M_x$ ;

(b) a cyano anthracene

(c) a polystyrene sulphonate; and,

(d) a compound having a general chemical formula as shown in figures 2 or 3  
of the drawings.

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46. (New) An electroluminescent device according to claim 42 wherein  
the electron transmitting material is mixed with the electroluminescent material.

47. (New) An electroluminescent device according to claim 38 wherein  
10 the first electrode comprises a transparent, electricity-conducting glass electrode.

48. (New) An electroluminescent device according to claim 38 wherein  
the second electrode comprises a material selected from the group consisting of  
aluminum, calcium, lithium, magnesium, alloys thereof, and silver/magnesium  
15 alloys.

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